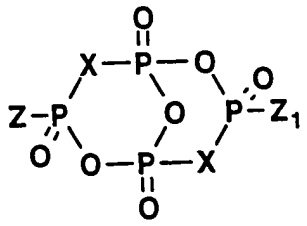
WHAT IS CLAIMED IS:

1. A compound having the following structure:



wherein

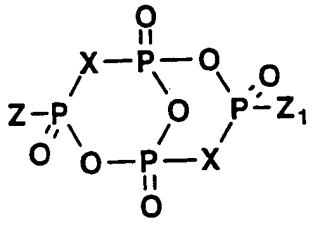
Z and Z_1 are the same or different and are alkyl, aralkyl, aryl, aminoalkyl, alkyloxy, aralkyloxy, alkylamino, aralkylamino, arylamino, alkylmercaptan, aralkylmercaptan, arylmercaptan, carbohydrate, nucleoside, steroid, or substituted glyceride; and

X is methylene ($-CH_2-$), mono- or di-halo methylene, or -NR-, where R is H or alkyl.

2. The compound of claim 1, wherein Z and Z_1 are carbohydrates and X is methylene or difluoromethylene.

3. The compound of claim 1, wherein Z and Z_1 are nucleosides and X is methylene or difluoromethylene.

4. A method for the preparation of a compound having the following structure:

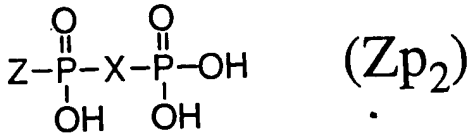


wherein

Z and Z_1 are the same or different and are alkyl, aralkyl, aryl, aminoalkyl, alkyloxy, aralkyloxy, alkylamino, aralkylamino, arylamino, alkylmercaptan, aralkylmercaptan, arylmercaptan, carbohydrate, nucleoside, steroid, or substituted glyceride; and

X is methylene ($-CH_2-$), mono- or di-halo methylene, or -NR-, where R is H or alkyl;

which method comprises reacting a compound having the following structure:



(Zp_2)

wherein Z and X are as described, with a dehydrating agent.

5. The method of claim 4, wherein the dehydrating agent is a carbodiimide.

6. The method of claim 5, wherein the dehydrating agent is dicyclohexylcarbodiimide or diisopropylcarbodiimide.

7. The method of claim 4, wherein the starting material which is reacted with the dehydrating agent is selected from the group consisting of:

2',3'-O-isopropylideneadenosin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylideneinosin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylideneguanosin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylideneuridin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidenecytidine-5'-ylphosphono-

methylenephosphonate,

3'-O-(tetrahydropyranyl)thymidin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidenetiazofurin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidene-3-ribofuranosylbenzamid-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidene-ψ-uridin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidene-ψ-isocytidin-5'-ylphosphono-methylenephosphonate,

9-(2'-deoxy-2'-fluoro-3'-O-tetrahydropyranyl-β-D-arabinofuranosyl)adenine-5-ylphosphonomethylene-phosphonate,

9-(3'-deoxy-3'-fluoro-2'-O-tetrahydropyranyl-β-D-xylofuranosyl)adenine-5-ylphosphonomethylenephosphonate,

2'-deoxy-2'-fluoro-3'-O-tetrahydropyranyl-adenosin-5-ylphosphonomethylenephosphonate,

3'-deoxy-3'-fluoro-2'-O-tetrahydropyranyl-adenosin-5-yl-phosphonomethylenephosphonate,

2',3'-O-isopropylidene-9-deazaadenosin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidene-9-deazainosin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylidene-9-deazaguanosin-5'-ylphosphono-methylenephosphonate,

2',3'-O-isopropylideneadenosin-5'-ylphosphono-difluoromethylenephosphonate,

2',3'-O-isopropylideneinosin-5'-ylphosphonodi-fluoromethylenephosphonate,

2',3'-O-isopropylideneguanosin-5'-ylphosphonodi-fluoromethylenephosphonate,

3'-O-(tetrahydropyranyl)thymidin-5'-ylphosphonodi-fluoromethylenephosphonate,

2',3'-O-isopropylidenetiazofurin-5'-ylphosphonodifluoromethylenephosphonate,

2',3'-O-isopropylidene-3-ribosylbenzamid-5'-ylphosphonodifluoromethylenephosphonate,

2',3'-O-isopropylidene-ψ-uridin-5'-ylphosphonodifluoromethylenephosphonate,

2',3'-O-isopropylidene-ψ-isocytidin-5'-ylphosphonodifluoromethylenephosphonate,

9-(2'-deoxy-2'-fluoro-3'-O-tetrahydropyranyl-β-D-arabinofuranosyl)adenine-5-ylphosphonodifluoromethylenephosphonate,

9-(3'-deoxy-3'-fluoro-2'-O-tetrahydropyranyl-β-D-xylofuranosyl)adenine-5-ylphosphonodifluoromethylenephosphonate,

2'-deoxy-2'-fluoro-3'-O-tetrahydropyranyl-adenosin-5-ylphosphonodifluoromethylenephosphonate,

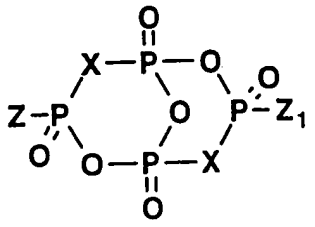
3'-deoxy-3'-fluoro-2'-O-tetrahydropyranyl-adenosin-5-ylphosphonodifluoromethylenephosphonate,

2',3'-O-isopropylidene-9-deazaadenosin-5'-ylphosphonodifluoromethylenephosphonate,

2'.3'-O-isopropylidene-9-deazainosin-5'-ylphosphonodifluoromethylenephosphonate, and

2',3'-O-isopropylidene-9-deazaguanosin-5'-ylphosphonodifluoromethylenephosphonate.

8. A method for the preparation of a compound having the following structure:

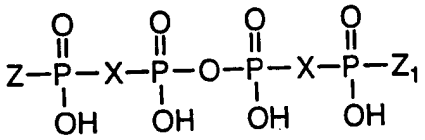


wherein

Z and Z_1 are the same or different and are alkyl, aralkyl, aryl, aminoalkyl, alkyloxy, aralkyloxy, alkylamino, aralkylamino, arylamino, alkylmercaptan, aralkylmercaptan, arylmercaptan, carbohydrate, nucleoside, steroid, or substituted glyceride; and

X is methylene ($-CH_2-$), mono- or di-halo methylene, or $-NR-$, where R is H or alkyl;

which method comprises reacting a compound having the following structure:



(Zp_4Z_1)

wherein Z, Z_1 and X are as defined above, with a dehydrating agent.

9. The method of claim 8, wherein the starting material which is reacted with the dehydrating agent is selected from the group consisting of:

P^1,P^4-di(adenosin-5'-yl)phosphonomethylenephosphonic P^2,P^3- anhydride,

P^1,P^4-di[9-(2'-deoxy-2'-fluoro-β-D-arabono-furanosyl)adenine-5-yl]phosphonomethylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di[9-(3'-deoxy-3'-fluoro-β-D-xylofuranosyl)-adenine-5'-yl]phosphonomethylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(2'-deoxy-2'-fluoroadenosin-5-yl)phosphono-methylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(3'-deoxy-3'-fluoroadenosin-5-yl)phosphono-methylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(inosin-5'-yl)phosphonomethylenephosphonic

P^2,P^3- anhydride,
P^1,P^4-di(guanosin-5'-yl)phosphonomethylenephosphonic P^2,P^3- anhydride,
P^1,P^4-di(uridin-5'-yl)phosphonomethylenephosphonic P^2,P^3- anhydride,
P^1,P^4-di(N^4-acetylcytidin-5'-yl)phosphonomethylene-phosphonic P^2,P^3- anhydride,
P^1,P^4-di(thymidin-5'-yl)phosphonomethylenephosphonic P^2,P^3- anhydride,
P^1,P^4-di(tiazifurin-5'-yl)phosphonomethylene-phosphonic P^2,P^3- anhydride,
P^1,P^4-di(3-ribosylbenzamid-5'-yl)phosphonomethylene-phosphonic P^2,P^3- anhydride,
P^1,P^4-di(ψ-uridin-5'-yl)phosphonomethylenephosphonic P^2,P^3-anhydride,
P^1,P^4-di(ψ-isocytidin-5'-yl)phosphonomethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(9-deazaadenosin-5'-yl)phosphonomethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(9-deazainosin-5'-yl)phosphonomethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(9-deazaguanosin-5'-yl)phosphonomethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(adenosin-5'-yl)phosphonodifluoromethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(inosin-5'-yl)phosphonodifluoromethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(guanosin-5'-yl)phosphonodifluoromethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(thymidin-5'-yl)phosphonodifluoromethylene-phosphonic P^2,P^3-anhydride,
P^1,P^4-di(tiazofurin-5'-yl)phosphonodifluoro-

methylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(3-ribosylbenzamid-5'-yl)phosphonodifluoromethylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(ψ-uridin-5'-yl)phosphonodifluoromethylenephosphonic P^2,P^3-anhydride,

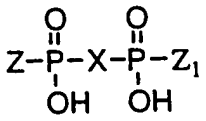
P^1,P^4-di(ψ-isocytidin-5'-yl)phosphonodifluoromethylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(9-deazaadenosin-5'-yl)phosphonodifluoromethylenephosphonic P^2,P^3-anhydride,

P^1,P^4-di(9-deazainosin-5'-yl)phosphonodifluoromethylenephosphonic P^2,P^3-anhydride, and

P^1,P^4-di(9-deazaguanosin-5'-yl)phosphonodifluoromethylenephosphonic P^2,P^3-anhydride.

10. A method for the preparation of a compound having the following structure:

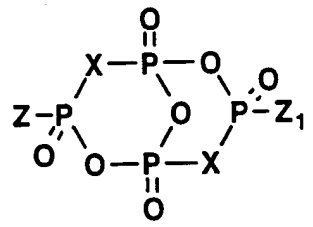


wherein

Z and Z_1 are the same or different and are alkyl, aralkyl, aryl, aminoalkyl, alkyloxy, aralkyloxy, alkylamino, aralkylamino, arylamino, alkylmercaptan, aralkylmercaptan, arylmercaptan, carbohydrate, nucleoside, steroid, or substituted glyceride; and

X is methylene ($-CH_2-$), mono- or di-halo methylene, or -NR-, where R is H or alkyl;

which method comprises reacting a compound having the following structure:



wherein Z, Z_1 and X are as defined above, with a nucleophilic agent.

11. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzen-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneadenosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneguanosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneinosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidene-ψ-uridin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-[5-

(2',3'-O-isopropylidene-ß-D-ribofuranosyl)nicotinamide-5'-yl]-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-[6-(2',3'-O-isopropylidene-ß-D-ribofuranosyl)picolinamide-5'-yl]methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylideneguanosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylideneinosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosyl-benzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidene-ψ-uridin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-[5-(2',3'-O-isopropylidene-ß-D-ribofuranosyl)nicotinamide-5'-yl]-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-[6-(2',3'-O-isopropylidene-ß-D-ribofuranosyl)picolinamide-5'-yl]-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylideneinosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylideneguanosin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-aetylcytidin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5'-yl)-P^2-(2'-O-acety-3'-deoxy-3'-fluoroadenosin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5'-yl)-P^2-(3'-O-acety-2'-deoxy-2'-fluoroadenosin-5'-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5-yl)-P^2-[9-(3'-O-acetyl-2'-deoxy-2'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5'-yl)-P^2-[9-

(2'-O-acetyl-3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(3'-O-acetyl-2'-deoxy-2'-fluoro-adenosin-5'-yl]methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-adenosin-5'-yl]methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]methylenebis(phosphonate), and

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]methylenebis(phosphonate).

12. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(adenosin-5'-yl)-P^2-(β-D-ribofuranosylbenzen-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(adenosin-5'-yl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(guanosin-5'-yl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(uridin-5'-yl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(cytidin-5'-yl)methylenebis-(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(inosin-5'-yl)methylenebis-(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(tiazofurin-5'-yl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(β-D-ribofuranosyl-benzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(ψ-uridin-5'-yl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-[5-(ß-D-ribofuranosyl)-nicotinamide-5'-yl]methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-[6-(ß-D-ribofuranosyl)-picolinamide-5'-yl]methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(guanosin-5'-yl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(uridin-5'-yl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(cytidin-5'-yl)methylenebis-(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(inosin-5'-yl)methylenebis-(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(tiazofurin-5'-yl)methylenebis-(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(β-D-ribofuranosyl-benzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(ψ-uridin-5'-yl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-[5-(ß-D-ribofuranosyl)-nicotinamide-5'-yl]methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-[6-(ß-D-ribofuranosyl)-picolinamide-5'-yl]methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(uridin-5'-yl)methylene-bis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(cytidin-5'-yl)methylenebis-(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(inosin-5'-yl)methylenebis-(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(tiazofurin-5'-yl)methylenebis-

(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(guanosin-5'-yl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(cytidin-5'-yl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(uridin-5'-yl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(tiazofurin-5'-yl)methylene-bis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(cytidin-5'-yl)methylenebis-(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(tiazofurin-5'-yl)methylenebis-(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)methylenebis(phosphonate),

P^1-(Tiazofurin-5-yl)-P^2-(3'-deoxy-3'-fluoroadenosin-5'-yl)methylenebis(phosphonate),

P^1-(Tiazofurin-5-yl)-P^2-(2'-deoxy-2'-fluoroadenosin-5'-yl)methylenebis(phosphonate),

P^1-(Tiazofurin-5-yl)-P^2-[9-(2'-deoxy-2'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]methylenebis(phosphonate),

P^1-(Tiazofurin-5-yl)-P^2-[9-(3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]methylenebis(phosphonate),

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-deoxy-2'-fluoro-adenosin-5'-yl]methylenebis-(phosphonate),

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(3'-deoxy-3'-fluoroadenosin-5'-yl]methylenebis-(phosphonate),

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-

[9-(3'-deoxy-3'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]-methylenebis(phosphonate), and

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]methylenebis(phosphonate).

13. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(2',3'-O-isopropylidenetiazofurin-5'-yl)-P^2-(2',3'-O-isopropylideneadenosin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneadenosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneguanosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylideneinosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2',3'-O-

isopropylidene-ψ-uridin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-[5-(2',3'-O-isopropylidene-ß-D-ribofuranosyl)nicotinamide-5'-yl]difluoro-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-[6-(2',3'-O-isopropylidene-ß-D-ribofuranosyl)picolinamide-5'-yl]difluoro-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylideneguanosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylideneinosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosyl-benzene-3-carboxamide-5'-yl)difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2',3'-O-isopropylidene-ψ-uridin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-[5-(2',3'-O-isopropylidene-ß-D-ribofuranosyl)nicotinamide-5'-yl]-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-[6-

(2',3'-O-isopropylidene-ß-D-ribofuranosyl)picolinamide-5'-yl]-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylideneinosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylideneguanosin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylideneuridin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2',3'-O-isopropylidene-N^4-aetylcytidin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2',3'-O-isopropylidenetiazofurin-5'-yl)difluoromethylene-

bis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2',3'-O-isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5'-yl)-P^2-(2'-O-acety-3'-deoxy-3'-fluoroadenosin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5'-yl)-P^2-(3'-O-acety-2'-deoxy-2'-fluoroadenosin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5-yl)-P^2-[9-(3'-O-acetyl-2'-deoxy-2'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-tiazofurin-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(3'-O-acetyl-2'-deoxy-2'-fluoro-adenosin-5'-yl]difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-adenosin-5'-yl]difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]difluoromethylenebis-(phosphonate), and

P^1-(2',3'-O-Isopropylidene-β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-O-acetyl-3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]difluoromethylenebis-(phosphonate).

14. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(tiazofurin-5'-yl)-P^2-(adenosin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(adenosin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(guanosin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(uridin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(cytidin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(inosin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(tiazofurin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(ψ-uridin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-[5-(ß-D-ribofuranosyl)nicotinamide-5'-yl]difluoromethylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-[6-(ß-D-ribofuranosyl)-picolinamide-5'-yl]difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(guanosin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(uridin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(cytidin-5'-yl)difluoromethylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(inosin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(tiazofurin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(β-D-ribofuranosyl-benzene-3-carboxamide-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(ψ-uridin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-[5-(ß-D-ribofuranosyl)-nicotinamide-5'-yl]difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-[6-(ß-D-ribofuranosyl)-picolinamide-5'-yl]difluoromethylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(uridin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(cytidin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(inosin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(tiazofurin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(guanosin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(cytidin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(uridin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(tiazofurin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(cytidin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(tiazofurin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(β-D-ribofuranosylbenzene-3-carboxamide-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Tiazofurin-5'-yl)-P^2-(3'-deoxy-3'-fluoroadenosin-

5'-yl)difluoromethylenebis(phosphonate),

P^1-(Tiazofurin-5'-yl)-P^2-(2'-deoxy-2'-fluoroadenosin-5'-yl)difluoromethylenebis(phosphonate),

P^1-(Tiazofurin-5-yl)-P^2-[9-(2'-deoxy-2'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]difluoromethylenebis-(phosphonate),

P^1-(Tiazofurin-5'-yl)-P^2-[9-(3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]difluoromethylenebis-(phosphonate),

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(2'-deoxy-2'-fluoro-adenosin-5'-yl]difluoromethylenebis-(phosphonate),

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(deoxy-3'-fluoro-adenosin-5'-yl]difluoromethylenebis-(phosphonate),

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(3'-deoxy-3'-fluoro-β-D-arabinofuranosyl)adenin-5'-yl]difluoromethylenebis(phosphonate), and

P^1-(β-D-Ribofuranosylbenzene-3-carboxamide-5'-yl)-P^2-[9-(3'-deoxy-3'-fluoro-β-D-xylofuranosyl)adenin-5'-yl]-difluoromethylenebis(phosphonate).

15. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(2',3'-isopropylideneadenosin-5'-yl)-P^2-(benzyl 2,3-isopropylidene-β-D-ribosid-5-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3,4,6-

tetra-O-acetyl-α-D-mannopyranosyl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-β-D-gluocopyranosyl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-α-D-glucopyranosyl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-ß-D-gluocopyranosyl)-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-α-D-glucopyranosyl)-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-β-D-galactopyranosyl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-α-D-galactopyranosyl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-ß-D-galactopyranosyl)-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-α-D-galactopyranosyl)-methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-β-D-gluocopyranosyl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-α-D-glucopyranosyl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-α-D-mannopyranosyl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-O-isopropylidene-D-ribonolacton-5-yl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-ß-D-gluocopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-α-D-glucopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-β-D-galactopyranosyl)difluoromethylenebis-

(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3,4,6-tetra-O-acetyl-α-D-galactopyranosyl)difluoromethylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-ß-D-galactopyranosyl)-difluoromethylenebis(phosphonate), and

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-α-D-galactopyranosyl)-difluoromethylenebis(phosphonate).

16. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(Adenosin-5'-yl)-P^2-(D-ribose-5-yl)methylenebis-(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(D-ribonolacton-5-yl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(α-D-mannopyranosyl)methylene-bis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(D-ribonolacton-5-yl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(D-ribonolacton-5-yl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(D-ribonolacton-5-yl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(β-D-gluocopyranosyl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(α-D-glucopyranosyl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-ß-D-gluocopyranosyl)methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-α-D-

glucopyranosyl)methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(β-D-galactopyranosyl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(α-D-galactopyranosyl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-ß-D-galactopyranosyl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-α-D-galactopyranosyl)methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(β-D-gluocopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(α-D-glucopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(D-ribonolacton-5-yl)-difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(-D-ribonolacton-5-yl)-difluoromethylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(α-D-mannopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(D-ribonolacton-5-yl)-difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(D-ribonolacton-5-yl)-difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-ß-D-gluocopyranosyl)difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-α-D-glucopyranosyl)difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(β-D-galactopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(α-D-galactopyranosyl)-difluoromethylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-ß-D-galactopyranosyl)difluoro-methylenebis(phosphonate), and

P^1-(Uridin-5'-yl)-P^2-(2-acetamido-2-deoxy-α-D-galactopyranosyl)difluoromethylenebis(phosphonate).

17. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(N^4-acetyl-2',3'-O-isopropylidenecytidin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebisphosphonate,

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-acetylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-acetylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-acetylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-acetylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-acetylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-acetylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-acetylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-acetylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-

acetylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-acetylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-

(N-butoxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-butoxycarbonylaminoethy)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)methylenebis(phosphonate), and

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)methylenebis(phosphonate).

18. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(Cytidin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-acetylaminoethyl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-acetylaminoethyl)methylene-bis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-acetylaminoethyl)methylenebis-(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-acetylaminopropyl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-acetylaminopropyl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-acetylaminopropyl)methylene-bis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-acetylaminopropyl)methylene-bis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-acetylaminopropyl)methylene-bis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-acetylaminobutyl)methylene-bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-acetylaminobutyl)methylene-bis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-acetylaminobutyl)methylene-bis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-acetylaminobutyl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-acetylaminobutyl)methylenebis-(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-benzyloxycarbonylamino-ethyl)methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-benzyloxycarbonylamino-ethyl)methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-benzyloxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-benzyloxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)-methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)-methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-benzyloxycarbonylaminobutyl)-methylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-butoxycarbonylaminoethyl)-methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-butoxycarbonylaminoethy)-methylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(N-butoxycarbonylaminopropyl)-methylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)-methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)-methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)-methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)-methylenebis(phosphonate), and

P^1-(Uridin-5'-yl)-P^2-(N-butoxycarbonylaminobutyl)-methylenebis(phosphonate).

19. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

the methylenebis(phosphonate) analogue of flavin adenine dinucleotide,

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(ethyl 2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethil-S-acetyl-4-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(ethyl

2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-S-acetyl-4-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(ethyl 2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-S-acetyl-4-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(ethyl 2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-S-acetyl-4-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(ethyl 2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis-(phosphonate), and

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-S-acetyl-4-yl)methylenebis(phosphonate).

20. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-(adenosin-5'-yl)-P2-(riboflavin-5'-yl)methylene-

bis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(ethyl-2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis(phosphonate),

P^1-(Adenosin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethil-S-acetyl-4-yl)methylenebis(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis-(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(ethyl-2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis-(phosphonate),

P^1-(Guanosin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-S-acetyl-4-yl)methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis-(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(ethyl-2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis(phosphonate),

P^1-(Inosin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-S-acetyl-4-yl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis-(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(ethyl-2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis(phosphonate),

P^1-(Uridin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-4-yl)methylenebis(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(riboflavin-5'-yl)methylenebis-(phosphonate),

P^1-(Cytidin-5'-yl)-P^2-(ethyl-2,4-dihydroxy-3,3-dimethylbutyrate-4-yl)methylenebis(phosphonate), and

P^1-(Cytidin-5'-yl)-P^2-(2,4-dihydroxy-3,3-dimethylbutyryl-β-alanyl-β-aminoethanethiol-4-

yl)methylenebis(phosphonate).

21. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

P^1-5'-O-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5-yl)-P^2-O-(1,2-dipalmitoyl-sn-glycer-1-yl)methylenebis-(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-palmitoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-O-palmitoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-palmitoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-palmitoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-laurylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-O-laurylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-laurylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-laurylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2,3-di-O-lauylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-myristoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-O-myristoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-myristoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-myristoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-

(2,3-di-O-myristoylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-stearylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-O-stearylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-stearylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-stearylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2,3-di-O-stearylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-oleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-O-oleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-oleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-oleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2,3-di-O-oleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-linoleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-O-linoleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-linoleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-linoleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2,3-di-O-linoleylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneadenosin-5'-yl)-P^2-(2,3-di-O-linolenylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneguanosin-5'-yl)-P^2-(2,3-di-

O-linolenylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneinosin-5'-yl)-P^2-(2,3-di-O-linolenylglycer-1-yl)methylenebis(phosphonate),

P^1-(2',3'-O-Isopropylideneuridin-5'-yl)-P^2-(2,3-di-O-linolenylglycer-1-yl)methylenebis(phosphonate), and

P^1-(2',3'-O-Isopropylidene-N^4-acetylcytidin-5'-yl)-P^2-(2,3-di-O-linolenylglycer-1-yl)methylenebis(phosphonate).

22. The method of claim 10, wherein the prepared compound is selected from the group consisting of:

N^1-(n-butan-4-yl)-2',3'-O-isopropylideneinosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(*n*-Butan-4-yl)-2',3'-O-isopropylideneadeosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(*n*-Butan-4-yl)-2',3'-O-isopropylideneguanosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(*n*-Butan-4-yl)-2',3'-O-isopropylideneuridin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(*n*-Butan-4-yl)-2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(2,3-Dihydroxy-4-hydroxymethylcyclopentan-6-yl)-2',3'-O-isopropylideneadeosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(2,3-Dihydroxy-4-hydroxymethylcyclopentan-6-yl)-2',3'-O-isopropylideneguanosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(2,3-Dihydroxy-4-hydroxymethylcyclopentan-6-yl)-2',3'-O-isopropylideneinosin-5'-yl cyclic P^1,P^2-methylenebis-(phosphonate),

N^1-(2,3-Dihydroxy-4-hydroxymethylcyclopentan-6-yl)-2',3'-O-isopropylideneuridin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(2,3-Dihydroxy-4-hydroxymethylcyclopentan-6-yl)-2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl cyclic P^1,P^2-

methylenebis(phosphonate),

N^1-(Ethoxymethan-2-yl)-2',3'-O-isopropylideneadeosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

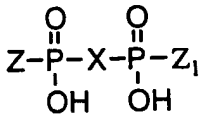
N^1-(Ethoxymethan-2-yl)-2',3'-O-isopropylideneguanosin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate),

N^1-(Ethoxymethan-2-yl)-2',3'-O-isopropylideneinosin-5'-yl cyclic P^1,P^2-methylenebis-(phosphonate),

N^1-(Ethoxymethan-2-yl)-2',3'-O-isopropylideneuridin-5'-yl cyclic P^1,P^2-methylenebis(phosphonate), and

N^1-(Ethoxymethan-2-yl)-2',3'-O-isopropylidene-N^4-acetylcytidin-5'-yl cyclic P^1,P^2-methylene-bis(phosphonate).

23. A compound having the following structure:

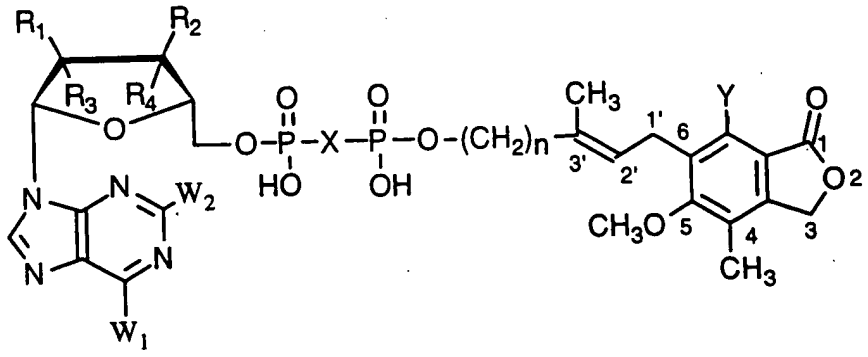


wherein

Z and Z_1 are the same or different and are alkyl, aralkyl, aryl, aminoalkyl, alkyloxy, aralkyloxy, alkylamino, aralkylamino, arylamino, alkylmercaptan, aralkylmercaptan, arylmercaptan, carbohydrate, nucleoside, steroid, or substituted glyceride; and

X is methylene ($-CH_2-$), mono- or di-halo methylene, or -NR-, where R is H or alkyl.

24. A compound having the following structure:



wherein

each of R_1, R_2, R_3, and R_4 is independently H, OH or F;

X is O, S, mono- or di-halomethylene, or NR wherein R is H or alkyl, or CH_2;

Y is OH, SH or F; and

each of W_1 and W_2 is independently H, OH, =O, OR, SH, SR, NH_2, NHR or NR_2, wherein R is C_1-C_5 alkyl and n is an integer from 1 to 5.

25. The compound of claim 24, wherein the compound is selected from the group consisting of:

P1-(2',3'-O-isopropylideneadenosin-5'-yl)-P2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneadenosin-5'-yl)-P^2-[7-

hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylocta-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-(7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-(7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-

yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-

arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-(2',3'-O-isopropylideneguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-

methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyguanosin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-

arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-(2',3'-O-isopropylideneinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(2',3'-O-isopropylideneinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-

hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(3'-O-acetyl-2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-(2'-O-acetyl-3'-fluoro-3'-deoxyinosin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-

methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-O-acetyl-2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate), and

P^1-[9-(2'-O-acetyl-3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'- yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate).

26. The compound of claim 24, wherein the compound is selected from the group consisting of:

P1-(adenosin-5'-yl)-P2-(mycophenol-5'-yl)methylene-bis(phosphonate),

P^1-(adenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'- methylbut-2'-ene-4'-yl)]methylenebis-(phosphonate),

P^1-(adenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'- methylpent-2'-ene-5'-yl)]methylenebis-(phosphonate),

P^1-(adenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'- methylhept-2'-ene-7'-yl)]methylenebis-(phosphonate),

P^1-(adenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2-ene-8'-yl)]methylenebis-(phosphonate),

P^1-(2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]-methylenebis-(phosphonate),

P^1-(2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]-methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2-ene-6'-yl)]-methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]-methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]-methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]-methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]-methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]-methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyadenosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]-methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyadenosin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]-methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'- methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-

5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)adenin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-(guanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-(guanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-(guanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-(guanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-(guanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2-ene-8'-yl)]methylenebis-(phosphonate),

P^1-(2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]-methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2-ene-6'-yl)]methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyguanosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyguanosin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-

5'-yl]-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P¹-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P¹-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P¹-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P¹-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)guanin-5'-yl]-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P¹-(inosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'- methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P¹-(inosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P¹-(inosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P¹-(inosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'- methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P¹-(inosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2-ene-8'-yl)]methylenebis-(phosphonate),

P¹-(2'-fluoro-2'-deoxyinosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P¹-(2'-fluoro-2'-deoxyinosin-5'-yl)-P²-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-

5'-yl)]methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2-ene-6'-yl)]methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[mycophenol--6-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-(2'-fluoro-2'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyinosin-5'-yl)-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylenebis(phosphonate),

P^1-(3'-fluoro-3'-deoxyinosin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-

6'-yl)]methylenebis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate),

P^1-[9-(2'-fluoro-2'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylbut-2'-ene-4'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylpent-2'-ene-5'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhex-2'-ene-6'-yl)]methylene-bis(phosphonate),

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methylhept-2'-ene-7'-yl)]methylene-bis(phosphonate), and

P^1-[9-(3'-fluoro-3'-deoxy-ß-D-arabinofuranosyl)-hypoxanthin-5'-yl]-P^2-[7-hydroxy-5-methoxy-4-methyl-phthalan-1-on-6-yl-(3'-methyloct-2'-ene-8'-yl)]methylene-bis(phosphonate).